REMARKS

Claims 56-59 and 95-97 are pending in the application, the independent claims being 56, 57, 59, 95, and 97.

Support for the claim amendments is found throughout the specification and in particular at p. 38, line 8 – p. 39, line 7.

Interview

Applicants thank Examiner Pollock for discussing the application in a telephonic interview on March 31, 2010 with Messrs. Baker and Stimson. During the interview, agreement was reached on the § 101 rejection. The Examiner agreed to reconsider the § 112 rejection regarding "substantially the same" in view of ¶¶ 44-45 of the Baker declaration. Agreement was reached on the § 112 rejection regarding the preamble of claim 56, as amended herein. Agreement was reached on the § 112 rejection regarding the "essential structural cooperative relationships" in view of the amendments to the claims herein. Agreement was reached regarding the scope of claims and intended use statements in view of the amendments to the claims herein.

During the interview, Mr. Baker explained the background of the invention and discussed the Dembo and Kiron references. The Examiner agreed to consider the arguments in this reply and the secondary considerations of nonobviousness set forth in ¶¶ 12-28 of the Baker declaration dated September 28, 2009. Applicants requested reconsideration of the rejections under § 103, and that they be withdrawn.

Statement of the Invention and Second Baker Declaration

None of the cited prior art, including Dembo and Kiron, discloses or suggests the claimed combination of using risk factor analysis and portfolio modeling to create a proxy portfolio which may be used to estimate the value of a traded fund whose holdings are not known to investors who trade shares of the traded fund. In other words, the prior art fails to disclose or

suggest using factor analysis and portfolio modeling to enable the secondary market trading of non-disclosed traded funds. The cited prior art does not anticipate the invention, nor would any combination of the prior art have rendered the claimed invention obvious to those having ordinary skill in the art, as amply demonstrated below and in the declarations submitted by Mr. Baker.

The invention allows for the creation and trading of actively managed exchange traded funds without revealing the assets in the fund. Actively managed funds such as traditional mutual funds have been known in the financial industry. In such funds an expert fund manager decides what securities the mutual fund should hold at any particular time, and trades during the day to achieve those positions. The assets in a mutual fund typically are not publicly disclosed in order to prevent "front running" – other investors anticipating the fund manager's trades in order to make the same trades before the fund manager to benefit from changes in the share price caused by the fund manager's investment – and "free riding" – other investors seeking to benefit from the fund manager's expertise without purchasing shares of the mutual fund. Both of these activities harm fund shareholders by, in the case of front running, reducing investment returns of the fund, and in the case of free riding, increasing cost by, in effect, causing the fund shareholders to subsidize the portfolio manager's fees on behalf of the free riders. Also known in the financial industry are exchange-traded funds (ETFs). ETFs differ from mutual funds in that their assets are publicly disclosed daily through dissemination of the ETF creation unit portfolio. In fact, at the time of the invention, ETFs were all based on published indices. ETFs need this level of disclosure, or "transparency," because they are traded on secondary markets at negotiated prices. Buyers and sellers of ETF shares must have sufficient information during the trading day to assess whether the share prices are fair, and market makers must have sufficient information to hedge their trades in shares of the ETFs in order to provide reasonably liquid markets. Further, the transparency of the fund holdings, coupled with the fund's open-ended structure, provides an arbitrage mechanism that helps keep the secondary market prices close to the fair value.

This need for fund transparency (disclosure of the assets of the fund) has been a fundamental obstacle to the creation of actively managed exchange traded funds (AMETFs). (Second Baker Decl. ¶¶ 8-28). The present invention solves the transparency problem by creating a proxy portfolio that tracks a fund closely enough that the proxy portfolio can be used to estimate the price of the fund throughout the trading day. (Other commonly owned patents and applications by the same inventors claim hedging portfolios that can be used to hedge investments in shares of the fund).

The claims, as amended, all involve a "traded fund" or an "exchange traded fund," both of which issue shares that are traded "on a secondary market" (i.e., the shares are not just purchased from and redeemed by the fund itself). All claims involve using risk factor analysis to create a proxy portfolio for each type of fund, using the proxy portfolio to estimate a value for the fund wherein the proxy portfolio does not reveal the fund assets, and the fund assets are not disclosed to an investor who trades shares of the fund. The claims thus require both that shares of the fund are traded on a secondary market, and that the fund not be transparent.

The primary prior art the Examiner cites is Dembo, which discusses a "portfolio replication" process. There is, however, a fundamental difference between the "traded funds" in the present claims and Dembo's "portfolios." Traded fund shares are separate and distinct securities that are traded, whereas portfolios are not. Dembo does not relate to traded funds, nor does Dembo disclose or suggest the desirability of avoiding transparency in traded funds. Dembo thus fails to teach or suggest the limitation in the present claims that "the fund assets are not disclosed to an investor who trades shares of the fund on a secondary market."

The actively managed exchange traded funds of the invention differ substantially from traditional actively managed mutual funds because with traditional funds, investors can only buy or redeem shares directly from the fund once each day, at the exact Net Asset Value (NAV) of the fund. In the claimed invention, however, fund shares can be traded on secondary markets based on a value that is determined by the market, and may be estimated using a proxy portfolio. Thus three important differences distinguish actively managed mutual funds from the traded

funds of the invention: (1) the traded funds of the invention can be sold throughout the trading day, not just once a day at market close; (2) the traded funds of the invention are traded on secondary markets, not just created and redeemed with the fund company; and (3) the price at which the traded funds of the invention are bought and sold is the price determined in the secondary market, not NAV.

The combination of (1) creating a proxy portfolio, (2) using the proxy portfolio to estimate the fund value on an intraday basis, and (3) not disclosing the fund assets to investors who buy and sell shares of the fund in a secondary market is new and would not have been obvious at the time of Applicants' invention. Applicants have cited ample unrebutted evidence of secondary indicia of non-obviousness, and offer further evidence of non-obviousness in the form of the second declaration of Charles A. Baker, filed on November 5, 2009.

Rejections Under 35 U.S.C. § 112

Claims 56, 57, 59, 95, and 97 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite for reciting "substantially the same." Applicants request reconsideration. The case cited by the MPEP most similar to the rejected claim language is *Andrew Corp. v. Gabriel Electronics,* 847 F.2d 819 (Fed. Cir. 1988), in which the Federal Circuit held *definite* the limitation "which produces substantially equal E and H plane illumination patterns." The language in the rejected claims, "substantially the same," has the same meaning as "substantially equal," which the *Andrew* court held to be definite.

Under MPEP § 2173.05(b), "Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification." The question the Examiner must therefore determine is "whether one of ordinary skill in the art, in view of the prior art and the status of the art, would be ... reasonably apprised of the scope of the invention." MPEP § 2173.05(b). In this case Applicants provided evidence that those of ordinary skill in the art would be apprised of the scope of the invention, and the Examiner cites no evidence in rebuttal. *See* ¶¶ 44-45 of the Declaration of Charles A. Baker Under 37 C.F.R. §

1.132, dated September 28, 2009. Applicants believe the Examiner did not notice Applicants' evidence of definiteness because the Examiner did not acknowledge it as required under MPEP § 716.01(B). Applicants thus respectfully request this rejection be reconsidered and withdrawn.

Claim 56 was rejected under 35 U.S.C. § 112, second paragraph because the preamble recited a "traded fund" where the body of the claim recited a method. Applicants have amended the preamble to recite a method. Applicants request reconsideration of this rejection in view of Applicants' amendment, and that the rejection be withdrawn.

Claims 56-59 and 95-97 were rejected under 35 U.S.C. § 112, second paragraph as allegedly omitting essential structural cooperative relationships of elements and/or essential steps. Applicants request reconsideration. This rejection as stated in MPEP § 2172.01 *only* applies where the specification discloses essential interrelated elements. But "it is not essential to a patentable combination that there be interdependency between the elements of the claimed device...." *Ex parte Nolden*, 149 USPQ 378, 380 (Bd. Pat. App. 1965). That is the case here. The Examiner finds a missing structural cooperative relationship in the claims because "the structural elements responsible for performing action within each of the method [steps] which result in the intended result of 'the proxy portfolio does not reveal the assets of the traded fund and the identities of the assets of the traded fund are not disclosed to an investor ....'" First, the Examiner is mistaken that the characteristic of the proxy portfolio that it does not reveal the assets of the traded fund is an "intended result." In fact, it is a *required property* of the proxy portfolio. Second, that the properties of the proxy portfolio and the withholding of the identities of the assets of the traded fund have no cooperative structural relationship with the steps of the claim does not render the claim indefinite. A prerequisite for this rejection is "interrelate[d] essential elements of the invention as defined by applicant(s) in the specification." MPEP § 2172.01. In other words, there must be a teaching in the specification that the elements the Examiner points to are interrelated essential elements. *Id.* There is no such teaching in the specification at issue here, and the Examiner has indicated none. Applicants request that this rejection be reconsidered and withdrawn.

Rejections Under 35 U.S.C. § 101

Claims 57-59 and 95-97 were rejected under 35 U.S.C. § 101. Applicants have amended the independent claims as suggested by the Examiner at pages 7-8 of the office action to affirmatively recite that a computer programmed with software stored on a data storage device is used to perform the steps requiring a computer. Applicants submit that this satisfies the "machine" branch of the "machine-or-transformation" test of subject matter eligibility. Applicants thus request that the rejections be reconsidered and withdrawn.

Claim 56 was rejected under 35 U.S.C. § 101. Applicants have amended the preamble so that a method is claimed rather than a traded fund, thus rendering the rejection moot.

Claim Interpretation – Intended Use or Intended Results

The Examiner objected to claims 56, 57, 59, 95, and 97 as reciting an intended use. Applicants submit that the present amendment affirmatively recites and requires computers with specific software programming to perform the recited method steps. The claims now, therefore, specifically require that the computer performs the actions.

Claim Interpretation - Preamble

The Examiner notes that at least claims 57 and 95 are not limited by their preambles. Applicants agree, but note that these claims affirmatively recite the steps of "calculating the estimated value" of the fund, and thus the preamble is incorporated into the body of the claim.

Claim Interpretation – "Whereby" (or "Wherein") Clauses

The Examiner notes that claims 56-59 and 95-97 recite the claim limitation or an equivalent of "wherein the proxy portfolio does not reveal the assets of the traded fund and the identities of the assets of the traded fund are not disclosed to an investor who trades shares of the traded fund ...." The Examiner interprets this as a statement of intended use (or presumably intended result – the intended result of the method steps). Applicants disagree: these

affirmatively limit the proxy portfolio and disclosure of the identities of the assets of the traded fund.

First, the limitation on the proxy portfolio is that it does not reveal the assets of the traded fund. This specifies a particular characteristic of the proxy portfolio that is not the inherent result of the method steps, and thus further limits the claim. Second, the requirement of non-disclosure of the identities of the assets of the traded fund limits who can have that knowledge. Nothing in the method steps inherently requires this result.

In *Texas Instruments v. United States ITC*, 988 F.2d 1165, 1172 (Fed. Cir. 1993), for example, the Federal Circuit held that a "whereby" clause did not *further* limit a claim because the "'whereby/to preclude' clauses do not contain any limitations not inherent to the process...." The claims in this application, however, have "wherein" clauses that are not inherent to the process. The Examiner does not contend that the method steps inherently result in a proxy portfolio that does not reveal the assets of the traded fund, or in withholding the identities of the assets of the traded fund from an investor. Furthermore, "when the 'whereby' clause states a condition that is material to patentability, it cannot be ignored...." *Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1329 (Fed. Cir. 2005). Both of the limitations are material because both are required to keep the identities of the assets of the traded fund secret – they solve the transparency problem, the central issue addressed by the claimed invention. See ¶¶ 8-11 of the Declaration of Charles A. Baker Under 37 C.F.R. § 1.132, dated September 28, 2009.

Claim Interpretation – "traded funds"

Applicants disagree with the Examiner's interpretation of "traded fund" to mean "any type of investment instrument." The Examiner apparently disregards the term "traded." The Examiner cited a portion of the specification that clearly defines the term "fund," not "traded fund." In order to be a "traded fund," a fund must be traded. This is a material difference because a "fund" that is not traded does not have any disclosure requirements. Whereas an investor who buys shares of a "traded fund" will demand some information about the traded

fund, there is no such demand for information about a non-traded portfolio (as is discussed in Dembo) – nobody is trading it so nobody would demand such information, and the portfolio manager already knows the identities of the assets in the portfolio.

The Examiner's reading of "traded fund" contradicts the specification and the ordinary meaning of the claim term. The term "traded fund" requires the fund to be traded, and excludes any "fund" (such as the portfolio discussed in Dembo) that is not traded.

Claim Interpretation – "exchange traded funds"

Applicants disagree with the statement, at the end of paragraph 16, "That the proxy does not reveal the traded fund assets is a redundant limitation, as it is already known ... that the fund's assets are not publicly disclosed .... And, as noted above, it is impossible." Applicants dispute that anything recited in the claims is "impossible" and in fact have successfully tested the invention.

Claim Rejections – 35 U.S.C. § 103

Claims 56-59 and 95-97 were rejected under 35 U.S.C. § 103(a) over Dembo (U.S. Patent No. 5,799,287) in view of Kiron (U.S. Patent Publication No. 2002/0143676).

The Examiner states that "Dembo teaches **a traded fund**." *See* Office Action at p. 14 (emphasis in original). Applicants disagree. Dembo does not teach a traded fund. See ¶ 41 of the Declaration of Charles A. Baker Under 37 C.F.R. § 1.132, dated September 28, 2009. The Examiner's statement to the contrary lacks any support. Of course, since Dembo does not teach a traded fund at all, it likewise does not teach a traded fund that is traded on a "secondary market" as required by the claims.

The Examiner states that "Dembo also teaches or implies that the proxy portfolio does not reveal the assets of the traded fund and the identities of the assets of the traded fund are not disclosed to an investor...." *See* Office Action at p. 16. Applicants disagree. Dembo never mentions that his replicating portfolio does not reveal the assets of his target portfolio. Furthermore, Dembo discloses nothing about secrecy. In Dembo the portfolio manager does, in

fact, have knowledge of the assets of both the target portfolio and the replicating portfolio. See ¶ 42 of the Declaration of Charles A. Baker Under 37 C.F.R. § 1.132, dated September 28, 2009. Dembo does not disclose or suggest any investor that does not know the assets of a traded fund or any other portfolio.

The Examiner states that "Dembo teaches ... determining a set of risk factors" and cites Dembo at col. 15, lines 18-26. See Office Action at p. 15. The Examiner appears to misread Dembo. Dembo does not disclose risk factor modeling, but rather uses a distinct modeling technique known as scenario optimization. See ¶ 43 of the Declaration of Charles A. Baker Under 37 C.F.R. § 1.132, dated September 28, 2009.

Dembo thus fails to disclose or suggest at least four limitations: (1) traded fund, (2) a traded fund on a secondary market, (3) the identities of the assets of the traded fund are not disclosed to an investor, and (4) determining a set of risk factors.

While Kiron does relate to traded funds, it does not supplement any of the other deficiencies of Dembo. Kiron discusses a method of securitizing open end funds (e.g., traditional mutual funds that are not exchange-traded) to create a fund of funds that can be traded on an exchange. Kiron does not create a model (proxy portfolio) for any fund, rather it simply creates a new fund whose assets are entirely invested in another fund. Kiron at ¶ 55. It is this new fund that Kiron envisions trading on a secondary market, and not the funds held by the new fund.

The Examiner states that Kiron "teaches a method for calculating an estimated value for a traded fund without publicly disclosing the assets of the traded fund," citing claims 146-149 of Kiron. Applicants disagree. Neither those claims nor any other part of Kiron teaches or suggests calculating an estimated value of the traded fund without publicly disclosing its assets. Indeed, both the specification and claims clearly indicate that the assets of the traded fund are disclosed. Claim 146, for example, recites the step of "listing outstanding shares of an exchange traded fund having a portfolio comprising of mutual fund shares...." Because the shares are listed and because Kiron provides no alternatives to disclosure, the exchange traded fund portfolio must be disclosed.

The Examiner states that Kiron teaches "using a computer to calculate weights of securities to create a proxy portfolio with substantially the same performance as the traded fund." Applicants disagree. The Examiner cites ¶¶ 21, 50, 55, and 61-62 in Kiron, but these do not relate to a proxy portfolio. For example, at paragraph 55, in discussing Figure 2, Kiron states "The box designated 48 represents the closed end fund of funds which synthetically replicates the performance of those open end funds contained within box 40. By investing all available assets in box 40, the closed end fund of funds statistical performance correlates strongly and consistently with the open end funds located in box 40." Here Kiron is saying that the fund of funds will have a performance that is linked to the funds it has invested in – an obvious fact that is like saying the fund of funds is worth the same as the assets it holds. This is completely different than the proxy portfolio, which must not reveal the assets of the traded fund.

Finally, the Examiner states that in Kiron "the <u>price</u> (value) of the outstanding shares of the exchange traded fund is reported in real time [¶55-57] [claim 146-149]...." See Office Action at p. 16 (emphasis in original). The Examiner incorrectly equates price and value. Kiron clearly discloses that "The closed end fund of funds calculates its net asset value and disseminates that information ... on a daily basis. ... [Investors] then buy and sell the synthetic fund shares intra-day at any mutually agreed upon price...." Kiron at ¶ 56. Thus in Kiron, unlike in the present application, the public disclosure is of the *actual net asset value* of the traded fund. In the present claims, however, instead of the actual net asset value of the traded fund, the methods calculate the "estimated value of the traded fund based on the value of the proxy portfolio."

The Examiner acknowledges that Kiron does not teach or suggest a risk factor model. See Office Action at page 16. Neither does Dembo. Furthermore, neither Dembo nor Kiron, alone or in combination, teach or suggest withholding the identities of the assets of a traded fund from an investor who trades shares of the traded fund. For at least these two reasons, the rejections under § 103 fail to establish a *prima facie* case of obviousness.

Secondary Considerations of Non-Obviousness

Even if the rejections did establish a *prima facie* case of obviousness, Applicants have cited overwhelming evidence of non-obviousness that the Examiner did not dispute.

Under 35 U.S.C. § 103, obviousness requires that "the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art...." Applicants provide ample evidence about the financial industry at the time of the invention, and what those of ordinary skill in the art would have found obvious. It is clear from the unrebutted evidence that those of ordinary skill in the financial industry at the time of the invention were extremely concerned with the transparency problem, and that nobody else considered applicants' solution.

Applicants' invention is far from a "combination of familiar elements according to known methods." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). It was completely unknown to use factor analysis to create a proxy portfolio that could be used to protect the non-transparency of a traded fund, and it was completely unknown to use such a proxy portfolio to estimate the value of a traded fund.

As the Supreme Court warned, "A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *KSR*, 550 U.S. at 421. The rejections in this Office Action reflect a strong hindsight bias. The Supreme Court endorsed its previous guidance to avoid hindsight bias by considering "secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc." *KSR*, 550 U.S. at 406 (quoting *Graham v. John Deere*, 383 U.S. 1, 17-18 (1966)). Applicants provided ample secondary considerations that the Examiner must weigh in evaluating non-obviousness. *See* MPEP 716.

- Applicants have shown market demand for the invention, an indicator of potential commercial success. (Second Baker Decl. at ¶¶ 13, 18).

- Applicants have shown actual demand for the invention in the form of two firms who currently license the invention and intellectual property from Applicants to enable actively managed exchange traded funds. (Second Baker Decl. at ¶ 25).
- Applicants have shown strong industry interest in the invention from mutual fund companies and quantitative experts. (Second Baker Decl. at ¶¶ 26-27).
- Applicants have shown a long felt but unresolved need for the invention. (Second Baker Decl. at ¶ 19).
- Applicants have shown the failure of others to achieve a solution that did not involve fund transparency. (Second Baker Decl. at ¶ 20).
- Applicants have shown that experts in the financial industry were skeptical that the industry-recognized transparency problems could be solved. (Second Baker Decl. at ¶ 21).
- Applicants have demonstrated industry praise for their solution. (Second Baker Decl. at ¶ 22).
- Applicants have demonstrated that the art taught away from any non-transparent solution. (Second Baker Decl. at ¶¶ 23-24).
- Applicants have demonstrated that the financial industry recognized a serious problem that was overcome by the Applicants' invention. (Second Baker Decl. at ¶¶ 12-19).
- Applicants have shown that the New York Stock Exchange considers the invention to be valuable and recognizes its non-obviousness. (Dallmer Decl. at ¶¶ 2-4).

Based on the foregoing evidence, Applicants have proved that their invention would not have been obvious. (Second Baker Decl. at ¶ 28).

Conclusion

Prompt and favorable consideration of this Response and Amendment is respectfully requested.

Respectfully submitted,

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